

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A process for preparing high-concentration gaseous formaldehyde having a molar $\text{CH}_2\text{O} : \text{H}_2\text{O}$ ratio of ≥ 0.6 from an aqueous formaldehyde solution by evaporation of at least part of the solution, in which the aqueous formaldehyde solution is heated to a evaporation temperature T and the gas phase formed is taken off, wherein the evaporation temperature T obeys the relationship:

$$T \text{ [}^{\circ}\text{C}] \geq T'_{\min} \text{ [}^{\circ}\text{C}]$$

where $T'_{\min}(c) = A + B \times (c/100) + C \times (c/100)^2 + D \times (c/100)^3$

and

$$A = + 68.759, B = + 124.77, C = - 12.851, D = - 10.095,$$

where c is the instantaneous CH_2O content of the aqueous formaldehyde solution during the evaporation in percent by weight and is from 20 to 99% by weight.

2. (Previously presented) A process as claimed in claim 1, wherein the aqueous formaldehyde solution used as starting material in the process has CH_2O content of from 50 to 99% by weight.

3. (Previously presented) A process as claimed in claim 2, wherein the aqueous formaldehyde solution has CH_2O content of from 70 to 90% by weight.

4. (Previously presented) A process as claimed in claim 1, wherein the pressure during the evaporation is from 0.1 to 50 bar.

5. (Previously presented) A process as claimed in claim 1, wherein the molar $\text{CH}_2\text{O} : \text{H}_2\text{O}$ ratio is ≥ 1.4 .

6. (Currently amended) A process as claimed in any of claim 1, wherein a temperature which obeys the relationship

$$T \text{ [}^{\circ}\text{C}] \geq T'_{\min} \text{ [}^{\circ}\text{C}]$$

where T^2 where $T^2 \text{ min}(c) = A^c + B^c \times (c/100) + C^c \times (c/100)^2 + D^c \times (c/100)^3$

and

$A^c = + 6.0156, B^c = + 52.918, C^c = + 49.699, D^c = + 34.286,$

where c is the instantaneous CH_2O content of the aqueous formaldehyde solution during the evaporation in percent by weight and is from 20 to 99% by weight, is maintained in the aqueous formaldehyde solution at every point in the evaporator.

7. (Previously presented) A process as claimed in claim 1, wherein the evaporation is carried out in a stirred vessel, a helical tube, a film evaporator or another apparatus having heat exchanger characteristics.

8. (Previously presented) A process as claimed in claim 1, wherein the aqueous formaldehyde solution used as starting material in the process is prepared by oxidative dehydrogenation of methanol.

9. (Canceled)

10. (New) A process for preparing high-concentration gaseous formaldehyde having a molar $\text{CH}_2\text{O} : \text{H}_2\text{O}$ ratio of ≥ 0.6 from an aqueous formaldehyde solution by evaporation of at least part of the solution, in which the aqueous formaldehyde solution is heated to a evaporation temperature T and the gas phase formed is taken off, wherein the evaporation temperature T obeys the relationship:

$$T [\text{°C}] \geq T^2 \text{ min} [\text{°C}]$$

where $T^2 \text{ min}(c) = A + B \times (c/100) + C \times (c/100)^2 + D \times (c/100)^3$

and

$A = + 68.759, B = + 124.77, C = - 12.851, D = - 10.095,$

where c is the instantaneous CH_2O content of the aqueous formaldehyde solution during the evaporation in percent by weight and is from 20 to 99% by weight and wherein the aqueous

formaldehyde solution used as starting material in the process has CH₂O content of from 50 to 99% by weight.

11. (New) A process as claimed in claim 10, wherein the aqueous formaldehyde solution used as starting material has CH₂O content of from 70 to 90% by weight.

12. (New) A process as claimed in claim 11, wherein the pressure during the evaporation is from 0.1 to 50 bar.

13. (New) A process as claimed in claim 12, wherein the molar CH₂O : H₂O ratio is ≥ 1.4 .

14. (New) A process as claimed in claim 13, wherein a temperature which obeys the relationship

$$T \text{ [}^{\circ}\text{C}] \geq T''_{\min} \text{ [}^{\circ}\text{C}]$$

where $T''_{\min}(c) = A' + B' \times (c/100) + C' \times (c/100)^2 + D' \times (c/100)^3$

and

$A' = + 6.0156, B' = + 52.918, C' = + 49.699, D' = + 34.286,$

where c is the instantaneous CH₂O content of the aqueous formaldehyde solution during the evaporation in percent by weight and is from 20 to 99% by weight, is maintained in the aqueous formaldehyde solution at every point in the evaporator.

15. (New) A process as claimed in claim 14, wherein the evaporation is carried out in a stirred vessel, a helical tube, a film evaporator or another apparatus having heat exchanger characteristics.

16. (New) A process as claimed in claim 15, wherein the aqueous formaldehyde solution used as starting material in the process is prepared by oxidative dehydrogenation of methanol.